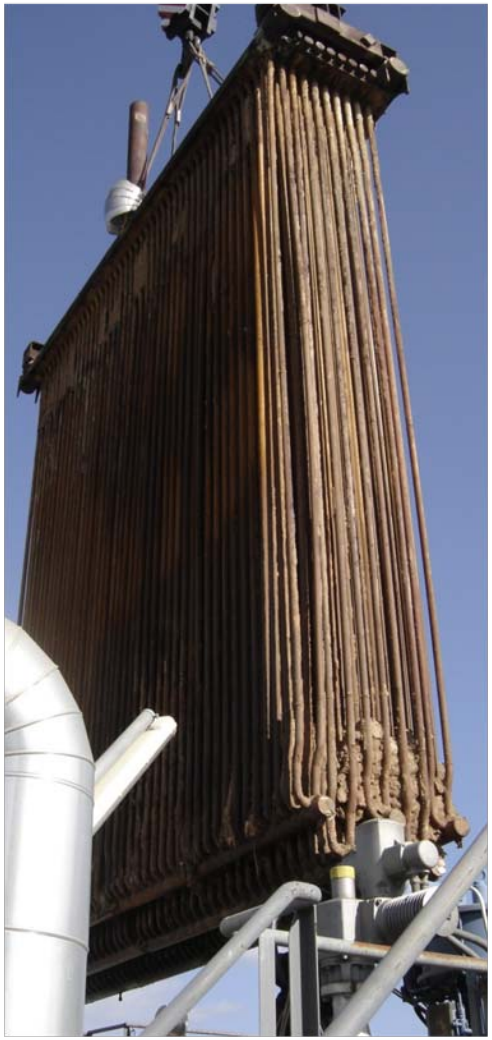
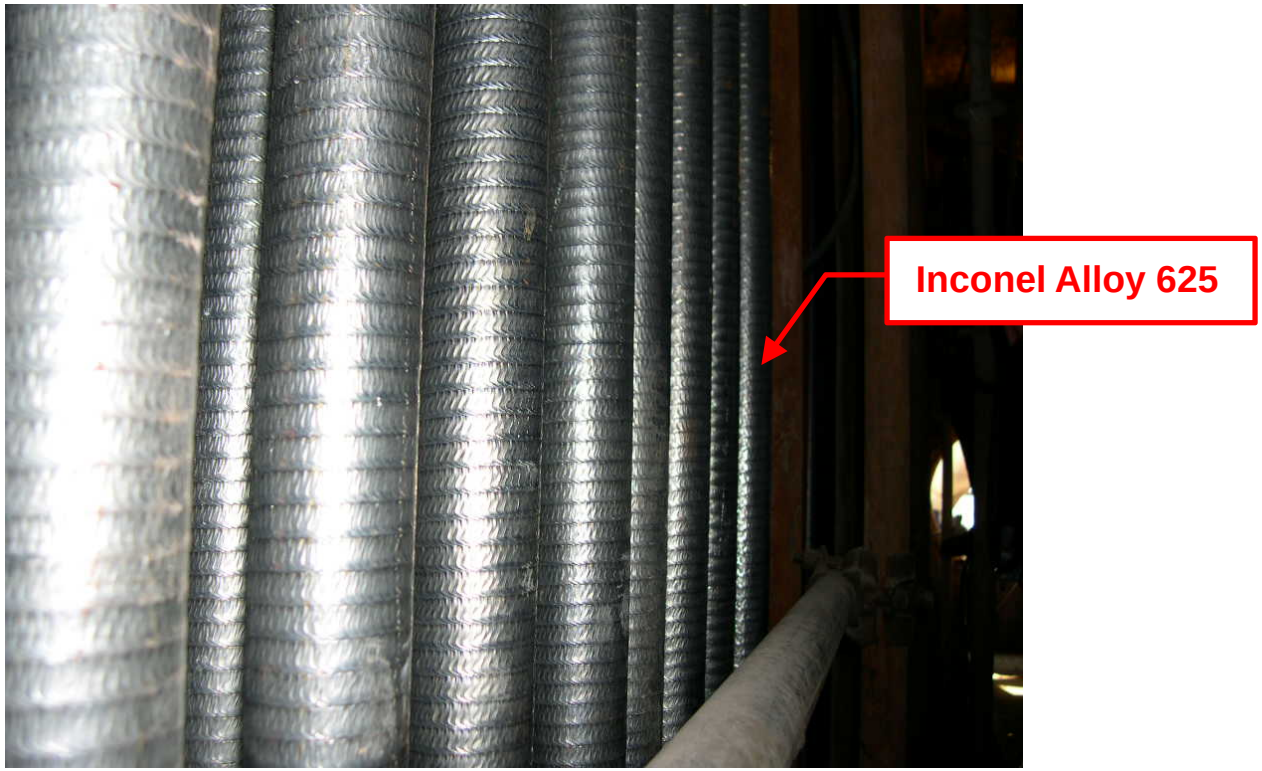
Substitution of damaged superheater SH3 (July 2005)



Substitution of damaged SH3 (July 2005)

Superheater SH2 (July 2005)



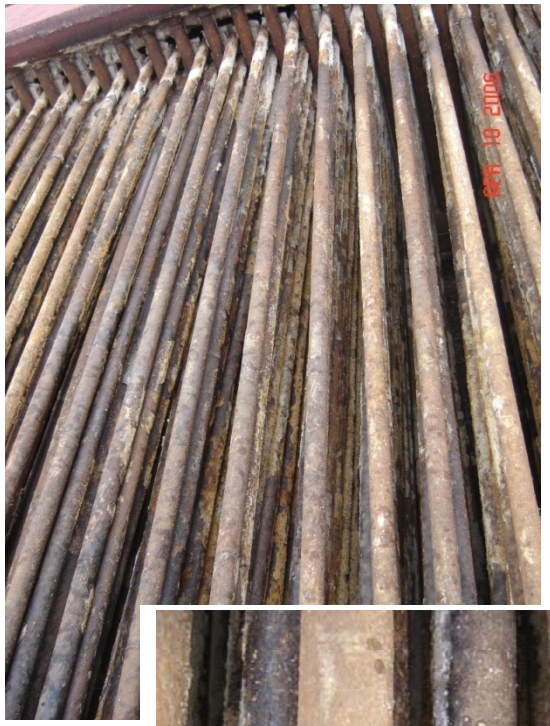
Weld Metal Overlay (WSI's *Unifuse*® Technology)

Source: Ing. Andrea Pacchiarotti, *Welding Services Italia*

Superheater SH3 (Ott. 2005)

SH3 inserted in July 2005
(photos of January 2006)

Substitution of SH3 and repair of SH2 bundles (April 2006)

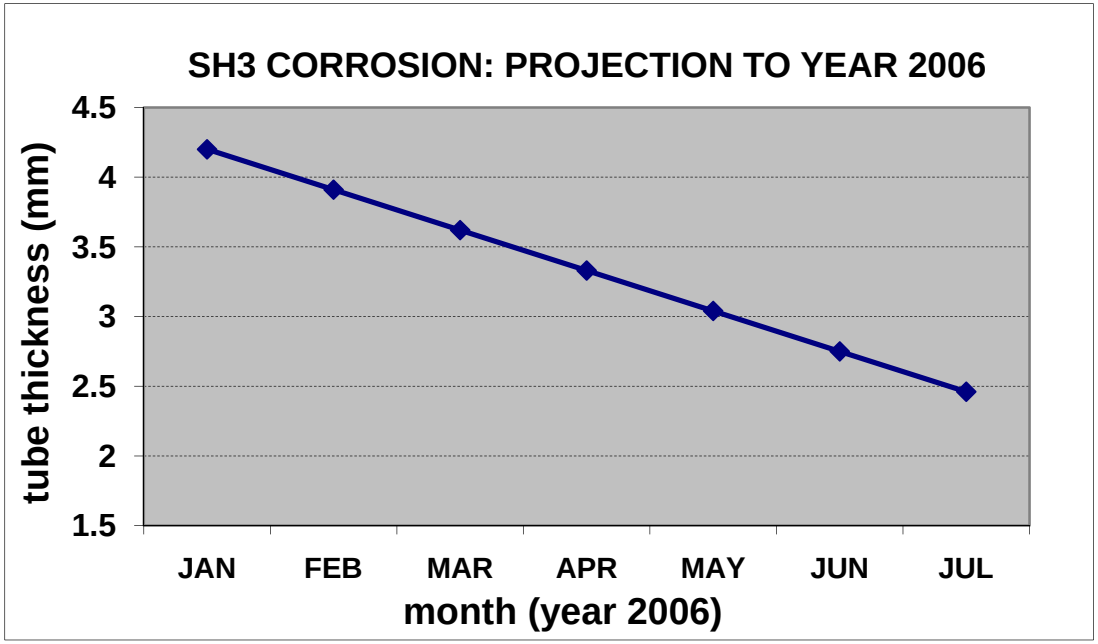


SH3

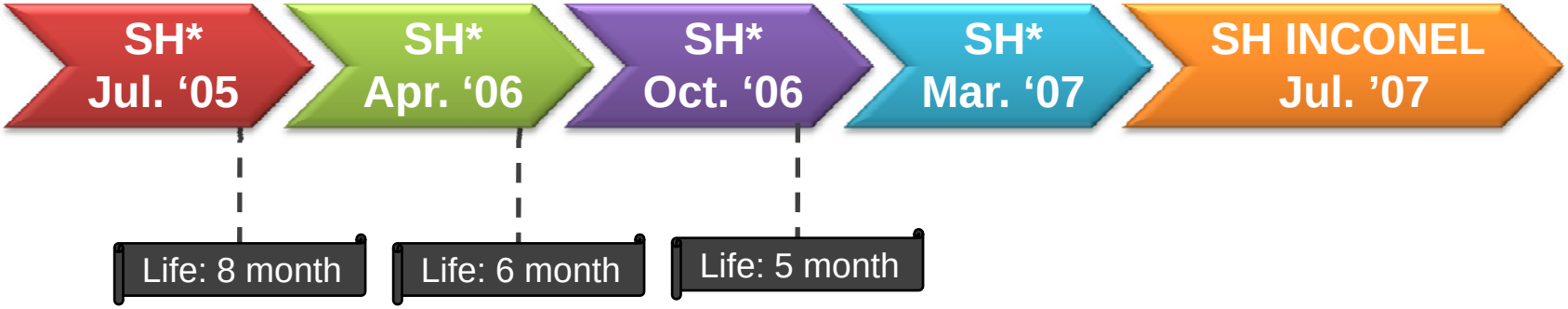
SH2

ASSESSMENT OF SH3 CORROSION

Plant shut down	From / To	period	period	thickness measurement (mm)				monthly average corrosion	notes
		gg.	gg.	Inlet	corrosion	Outlet	corrosion		
JULY 2005	04/07/2005	18		5,8		5,8			nominal thickness of new SH3
	22/07/2005		80		0,44		0,77	0,290	
OCT. 2005	10/10/2005	5		5,36		5.03			min. measured thickness
	14/10/2005		87		0,46		0,83	0,286	min. measured thickness
JAN. 2006	09/01/2006	14		4,9		4,2			min. measured thickness
	23/01/2006		69		0,40		0,70	0,300	min. measured thickness
APRIL 2006	03/04/2006	5		4,5		3,5			min. measured thickness
	07/04/2006		SH rupture: it was substituted during this plant shut down						



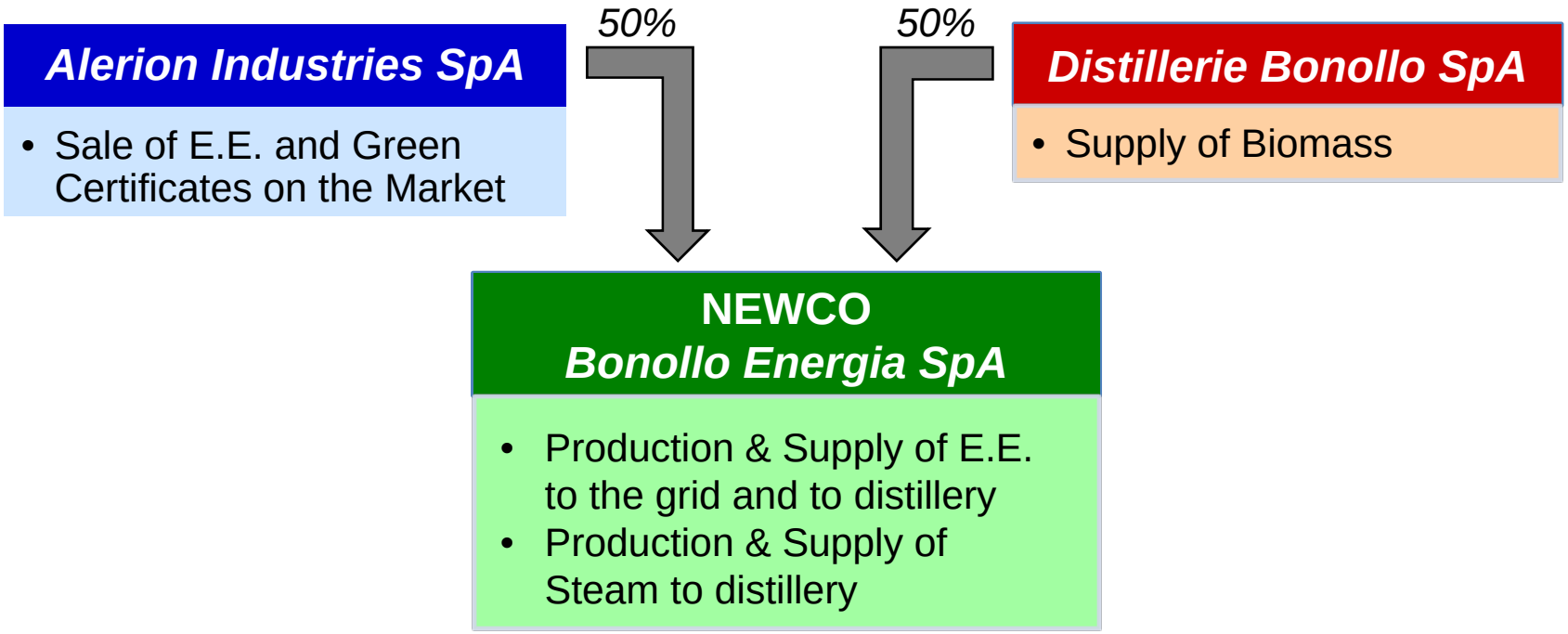
Superheaters replacements: chronology



*Same geometry and materials (ASTM A335 Gr T11)

With or without INCONEL overlay? Price estimates and comparison (year 2006)		
	T11 alloy tube bundle with INCONEL 625 overlay	Standard T11 alloy tube bundle
Lifetime	**Min. guaranteed: 3 years Expected: > 8 years**	**Proven: 6 - 8 months**
Price (only equipment supply)	260.000 € + 530.000 € for Inconel overlay **= 790.000 €**	**260.000 €**

A “Brand-New” Biomass Power Plant (Alerion’s Project)



- Biomass Power Plant Basic Data -

Start EPC: Jan. 2009; Plant start-up: Dec. 2010

- **Biomass** **145.000 t/year**
  (grape marc and grape seeds: grape byproducts after alcohol extraction; wood chips)
- **Th. Capacity** **50 MW**
- **E.E.** **12,5 MW (gross); 11 MW (net)**

Cogeneration mode:

- **Steam** **15 ton/h @ 3 bar(g), 143.6 °C**
- **E.E.** **11 MW (gross); 9,5 MW (net)**

ALERION

Alerion Industries S.p.A

Alerion Industries S.p.A. is a renewable energy utility listed at the Milan stock exchange.
www.alerion.it

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